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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/996,736	11/30/2001	Takashi Miyajima	011620	4486

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EXAMINER

DINH, TUAN T

ART UNIT

PAPER NUMBER

2827

DATE MAILED: 03/12/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/996,736

Applicant(s)

MIYAJIMA ET AL.

Examiner

Tuan T Dinh

Art Unit

2827

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 November 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) 5 and 6 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 7-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☒ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 7, and 11-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kledzik et al. (U. S. Patent 6,313,998) in view of Hernandez et al. (reference cited by applicant).

Kledzik discloses a printed wiring board unit as shown in figures 1-10 comprising:

a first component (104L, column 4, line 33) is mounted on a printed wiring board (101, column 4, line 22);

an auxiliary substrate (105, column 4, line 37) for hierarchical mounting is mounted next to the mounted first component (104L) on the printed wiring board (101);

a second component (104U) is mounted above the first component, the second component being supported on the auxiliary substrate for hierarchical mounting with terminals of the second component being connected thereto; and

the auxiliary substrate (105) having a frame like shape for hierarchical mounting has component pads (110, column 4, line 57) on an upper surface (111, column 4, line 57) thereof and printed wiring board pads (109, column 4, line 56) on a lower surface thereof, the component pads (110) being connected to the terminals (107U) of the

second component (104U), the printed wiring board pads (109) being connected to pads (103) on the printed wiring board (101), the component pads (110) and the printed wiring board pads (109) being electrically connected, the printed wiring board pads being more dispersed than the component pads.

Kledzik does not disclose the second component is larger in size than the first component.

Herandez shows a second component (IC die 24) is larger in size than a first component (capacitor 52).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have a second component is larger than a first component as taught by Herandez to employ the printed circuit board unit of Kledzik for purpose of limiting space of stacked chip modules mounted on a printed circuit board.

3. Claims 2-4, and 8-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kledzik in view of Herandez and further in view of Stearns et al. (U. S. Patent 6,160,705).

Kledzik and Herandez disclose all of the limitation of the claimed invention, except for the auxiliary substrate having ground and power supply layers inside.

Stearns teaches a substrate (10-figure 2) having ground and power supply layers (18, 20) inside.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use ground and power supply layers as taught by Stearns to

employ the PCB unit of Kledzik and Hernandez in order to provide ground and power electrical connection of a substrate and IC chip device.

Response to Arguments

Applicant's arguments with respect to claims 1-4, and 7-12 have been considered but are not persuasive.

Applicant argues:

(a) Kledzik teaches "leads 109 extend from the side of the carrier 105" and not on a lower surface of a substrate.

(b) Kledzik in view of Hernandez do not teach "a second component being larger in size than a first component"

Examiner disagrees.

Response to argument (a), Kledzik clearly shows in figure 1 leads 109 having a function of electrical contacts/connections such as pads, the leads or pads 109 having curve leads that bent down to a lower surface and contact to pad of a PCB (101).

Response to argument (b), first, examiner would emphasize that applicant claimed "a second component being larger in size than a first component" and not specific type of components. Clearly, Hernandez shows a second component (IC die 24) larger in size than a first component (capacitor 52) in figure 1, the teaching of Hernandez to provide the structure of Kledzik for purpose of limiting space of component mounted on the PCB and reducing height of the structure when they being formed stack of PCB unit.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Nickel and Isaak disclose related art.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuan T Dinh whose telephone number is 703-306-5856. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David L. Talbott can be reached on 703-305-9883. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-1341 for regular communications and 703-305-1341 for After Final communications.

Application/Control Number: 09/996,736


Page 6

Art Unit: 2827

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

TD

March 06, 2003.


KAMAND CUNEO
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800